

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A rotary solenoid apparatus comprising:
 - a rotation shaft,
 - a regulating means for regulating the rotation range of the rotating shaft,
 - a permanent magnet fixed to the rotating shaft in a body,
 - a spring for urging the rotational shaft in the circumferential direction,
 - a yoke having a pair of stator portions being opposite to the permanent magnet with a predetermined clearance,
 - a coil wound on the yoke; and
 - an energization control means for controlling the energization of the coil so that the coil is selectively excited,

wherein the permanent magnet is magnetized in the radial direction of the rotation shaft so that a variation of magnetic flux by the permanent magnet interlinking to the coil becomes constant with respect to rotation of the permanent magnetic when the permanent magnet is rotated.

2. (Currently Amended) A rotary solenoid apparatus as recited in Claim 1, wherein the energization control means includes a switching element for controlling the energization of the coil and a means for shorting between both ends of the coil so that current flows in the same direction as the energization direction of

the coil by the electromotive force generated along with the variation of the magnetic flux of the permanent magnet interlinking to the coil when the energization of the coil is interrupted.

3. (New) A rotary solenoid apparatus as recited in Claim 2, wherein the shorting means includes a diode connecting both ends of the coil and allowing the current to flow in the same direction as the energization direction of the coil.

4. (New) A rotary solenoid apparatus as recited in Claim 3, wherein the stator portions are positioned opposite to the permanent magnet with a predetermined clearance and are positioned outwardly of the permanent magnet in the radial direction.